Gateway

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The ARRL Packet-Radio Newsletter

FCC DEVASTATES 220-MHZ PACKET RADIO DEVELOPMENT "IN THE PUBLIC INTEREST"

On August 4, the FCC announced its decision to reallocate the 220-222 MHz Amateur Radio band to the land mobile service. In balancing the impact on existing users, emergency communications and future amateur growth against the land mobile requirements, the Commissioners concluded that the reallocation was "in the public interest" despite overwhelming opposition. Wishing to reassure amateurs of its strong support for the service, the FCC announced that the remaining 3 MHz of the band, 222-225 MHz, would be available on an exclusive basis.

In most parts of the country, this reallocation will lead to the shutting down of packet radio activity in the 220-MHz band including the backbone network that has been developed during the past few years. We cannot just pick up all of our packet radio operations and drop them in the 222-225 MHz subband. There just is not enough room. The ARRL band plan calls for five 100-kHz-wide packet radio channels in the 220.55-220.95 MHz subband and five 20-kHz-wide packet radio channels in the 221.01-221.09 Mhz subband. In addition, there is significant networking activity in many parts of the country in the 221.11-221.19 MHz subband. That adds up to approximately 700-kHz of packet radio spectrum that is being displaced.

For all practical purposes, amateurs have had "exclusive" use of 220-225 MHz because military use put few restrictions on amateur operations. The 222-225 MHz subband is almost exclusively devoted to the FM and FM-repeater modes of operation. The only space available for packet radio, and even then at the expense of FM simplex, is a few 20-kHz channels between 223.40 and 223.58 MHz. In many places it was tough to find even one frequency where Novices could use packet on 220. There just is not much space available and, to compound the problem, packet radio is not the only mode being displaced by the FCC's decision. Weak signal, E-M-E and control link operators will also be shopping for space in what is left of the 220-MHz Amateur band.

The good news is that we are not taking this decision lying down. Please read and, more importantly, react to the following memorandum from Dave Sumner, K1ZZ.

A MEMORANDUM TO ALL ARRL MEMBERS

FROM: DAVID SUMNER, K1ZZ,
ARRL EXECUTIVE VICE PRESIDENT

SUBJECT: REVERSING THE FCC DECISION TO REALLOCATE 220-222 MHZ TO THE LAND MOBILE SERVICE

There's only a few weeks left to reverse the FCC's onerous decision by legislative means in the 100th Congress. Among other initiatives, we believe that sending letters, QSL cards and calling the offices of key senators and congressmen will enhance our efforts on Capitol Hill. Please assist us in retaining this spectrum for amateur use by picking up your pen or phone today.

A proposed amendment to pending legislation follows. Please read it, then voice your support for Amateur Radio to the key decisionmakers listed at the end of this memo.

Radio Spectrum Allocation

Sec. The Commission shall enforce the regulations, rules and policies in effect as of August 3, 1988, as they relate to the Amateur Radio Service in the 220-225 MHz frequency band as defined in 47 CFR Section 2.106 (Table of Frequency Allocations).

U.S. HOUSE

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Rep. Edward J. Markey (D-MA)
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Sen. Daniel K. Inouye (D-HI)
Chairman of Communications Committee
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Washington, DC 20510
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RUDAK GLITCH DISCOVERED ON OSCAR 13

AMSAT-DL workers report there is a problem with RUDAK, the packet radio digipeater aboard the recently launched AMSAT OSCAR 13 satellite. When attempting to bootload from the PROM, the RUDAK CPU runs for a while but then hangs up. The 10-byte loader module will not allow a special program to be loaded into RAM. It is now recalled from the thermal vacuum tests that the PROM (a fusible link type) was then found to be temperature sensitive. AMSAT-DL is evaluating ways of warming the RUDAK module. One scheme being considered calls for energizing the module next to RUDAK, the LIU (Liquid Ignition Unit). This will warm up RUDAK considerably and may solve the problem they say.

from AMSAT NA News Service

TEXNET PROGRESS CONTINUES

Last month, the southern half of the TexNet network was linked to the northern half thus connecting the Dallas-Ft. Worth area and Rockport, Texas (Rockport is near the Gulf Coast, northeast of Corpus Christi, Texas.)

The performance of the TexNet network to date has been absolutely amazing. The longest possible path through the network is from Murphy to Rockport, Texas. It contains five 9600-baud radio hops totalling 240 miles and one 9600-baud landline hop of 180 miles. The round trip delay from Murphy to Rockport and back to Murphy on a ping (statistics request) is 6 seconds.

Because of the great speed of the backbone, all users everywhere in the network are using a single multiuser (10 simultaneous users) message system located at the Plano site (it is WØRLI-compatible and runs on a stock TexNet Z80 board). This has led to some confusion as most users cannot believe that forwarding is not required. The response time to the packet message system (PMS) is so fast that they believe it is local and they attempt to forward traffic on-network. This is not necessary since all users on the network are actually using the same PMS. The network also supports direct user-to-user connects and I have engaged in one-hour long QSOs from Murphy to Rockport. This connection had a slightly faster response than a one-digipeater local (non-network) connection.

We conducted a test with the National Weather Service last weekend. They were quite impressed that they could receive the Fort Worth weather bureau messages in real time at Corpus Christi. They view it as a possible emergency backup to their own network, if necessary.

Our measurements of the network show a daily average of 2 Mbytes of traffic. We are averaging about 80 messages a day on the PMS and about 400 network connection attempts on weekends. The heaviest simultaneous load measured at a given instant in time was five users connected to Plano on 2 meters, one user at Murphy on 2 meters, two users at Austin on 2 meters, one user at Alamo on the 220-MHz link to San Antonio and one user on 2 meters at Rockport. This loading caused only slight degradation of the network backbone performance and tremendous congestion on the Plano 2-meter access frequency of 145.05 Mhz.

This network design was started in 1985. It lends considerable credence to the article in Gateway Volume 4, Number 22 titled "A Look at LANs and WANs." Essentially, TexNet is the WAN discussed in that article.

In other matters, Texas Packet Radio Society (TPRS) has asked the Texas VHF-FM Society to reserve 144.91, 144.93, 144.95, 144.97 and 144.99 MHz for packet radio operations.

from Tom McDermott, N5EG, TPRS President

(For more information concerning TexNet and TPRS write to Texas Packet Radio Society, PO Box 831566, Richardson, TX 75083.)

TEXNET SUPPORT GROUP FORMED

At the August General Business Meeting of the Texas Packet Radio Society (TPRS) in Austin, a TexNet Support Group (TSG) was formed. It is currently getting organized with a start-up date tentatively set for September 15.

The purpose of the group is to handle response to correspondence faster, centralize TexNet and TPRS communications and information, provide a stable support base for TexNet technology and provide a timely distribution of TexNet related materials. The group is planning on providing information in three ways: TPRS phone BBS, CompuServe and the US Postal Service.

from Greg Jones, WD5IVD
via CompuServe's HamNet

FIRST RSGB DATA SYMPOSIUM

The first RSGB Data Symposium, which was held July 22-23 at the historic Harrow School, was attended by some 120 people and a dog called Dancer (more about him later).

The program comprised 21 lectures - all of those listed in Gateway Volume 4, Number 17 plus an impromptu one from the Belgian Packet Working Group, which was represented by five members. Subjects included digital signalling techniques on British Rail, Amateur Satellite communications, composing pictures using an RTTY terminal, packet-radio networking, from basic digital communications (smoke signals onwards), AMPRNET and high-speed modems. Each day's session ended with a lively and wide-ranging discussion, the first of which continued in the hotel bar well into the early hours of Saturday morning.

Thirteen countries were represented (including Senegal, India, US, Bermuda and New Zealand), and some of the most interesting talks were those describing packet-radio networking in the US, France, Ireland, Belgium and Germany.

Projects described were James Miller's 9600-baud modem, which was demonstrated throughout the symposium, 100-kbit/s link equipment (G3VPF), a low-cost bus-oriented network controller - the RMNC (DL8LE), FLEXNET software for level 2/3/4 of the RNMC (DL8LE) and the ARSENE satellite (F6ABJ).

All speakers on networking insisted that local, national and international coordination was essential and that user access and trunking frequencies must be separate. It was clear that the most obvious mistake to make was to place a user access node on a hilltop. Such a site should be reserved for trunking with local access nodes being much less well-suited. The 430-MHz band was generally considered to be ideal for end-user access.

Among the constructive suggestions made were: separate personal mail from bulletin traffic; move towards the provisions of services by groups not individuals; run duplex or semi-duplex trunk links wherever possible; negotiate an experimenters' license; make more standards/avoid making too many standards; move towards the delivery of mail overnight to the end-user's personal mailbox; improve TNC front panel displays and controls; make TNCs RF-proof; and do not ignore IARU Conferences in other Regions as intercontinental cooperation is vital for a global network.

Aside from the high tech stuff, there were some laughs to be had: Andy Witt's description of a desperate solution to a long distance forwarding problem whereby two SYSOPs exchanged disks at a mutually convenient Motorway services, W1BEL's wry summary of the history of packet radio, "In the early days, you couldn't have a QSO because we were waiting for enough activity to make a network; now there are so many people on packet that you still can't have a QSO because of congestion."

And, have you heard the one about the Irish SYSOP who is totally blind? Well, white stick operator EI3EG runs his mailbox very successfully with the aid of a speech synthesizer on his BBC 'B' and he manages to coordinate EI packet radio activity as well! The aforementioned Dancer was his very well-behaved guide dog.

The Symposium was, therefore, a lively mix of basics and high tech, theory and practice, heavy and light. If you weren't there, why not? Ask anyone who went and they will tell you those who did not go missed a treat; a fine venue, superb food and wine, and good company. See you at Harrow next year.

by Mike Dennison, G3XDV
from Connect International

THIRD SPACE COLLOQUIUM

Over 160 persons from 19 countries attended the third AMSAT-UK/UoSAT Space Colloquium held at the University of Surrey on July 29-31. International speakers presented 20 papers on diverse topics, covering geostationary AMSAT Phase 4 spacecraft designs, AMSAT Phase 3D spacecraft design, UoSAT-C, D and E spacecraft technologies, Amateur Radio using high altitude balloons, AMSAT OSCAR 13 spacecraft orbital commissioning and operations, UoSAT-1 and 2 spacecraft orbital operations, the Chinese space program, digital signal-processing techniques for amateur satellite communications, packet-radio satellites, Soviet-Canadian Transpolar SKITREK future and Soviet Amateur Radio satellites.

Among the many radio amateurs who attended were Jan King, W3GEY, Karl Meinzer, DJ4ZC, and Leo Labutin, UA3CR. Leo was particularly welcome and read a paper describing the SKITREK project and spoke on future Soviet satellite plans.

The Colloquium was preceded by a one-day Satellite Technical Workshop devoted to detailed discussions of advanced amateur satellite techniques and a one-day co-ordination meeting sponsored by the RSGB focusing on funding, frequency allocation and educational matters.

Colloquium Proceedings, comprising 16 of the papers presented, were sold out, however, additional copies will be available shortly from AMSAT-UK. The sponsors send their thanks to all who visited UoS last week and who made the Colloquium such a success!

from AMSAT NA News Service

XEROX PBBS SOFTWARE VERSION 12.2 NOW AVAILABLE

Version 12.2 of the "original" PBBS software for the XEROX 820 computer has been released. While there are many enhancements and changes, the four most notable are addition of the reverse-forwarding function, the W9ZRX PBBS list, a configuration program and the deletion of the gateway function. Deletion of the gateway function was necessary to free memory for the software enhancements.

CONFIGUR.COM is the result of a number of requests for a program that would guide the PBBS SYSOP through the configuration process. No text editor is necessary. Simply run the program and it asks you to choose configuration parameters of your own or to select defaults. When you are done, boot the system and the PBBS is ready to go.

The XEROX 820 PBBS is far from dead as over 50 copies of the previous version (12.1) were distributed. Source code will not be released in order to maintain the integrity and security of the SYSOP password feature, but to obtain a copy of executable software send an addressed disk mailer with sufficient postage attached (check with your post office for what amount is sufficient) with two 8-inch single-sided floppy disks. Also, the auto-boot version of the software is available on EPROM (with the auto-boot sequence in the CBIOS, the addition of the auto-boot code in EPROM allows a complete auto-start of the system from a power-up condition). To obtain copies, send two 2716-5V EPROMs in a sturdy enclosure with sufficient postage for their return. Mike Anderson, KA9LQM, PO Box 958, Evansville, IN 47706, is distributing the code, so send your disks or EPROMs to him. If you have any questions, contact the keeper of the code, John Bennett, N4XI @ N4XI, 5805 Whitethorne Dr, Evansville, IN 47710.

from John Bennett, N4XI @ N4XI

GATEWAY CONTRIBUTIONS

Submissions for publication in Gateway are welcome. You may submit material via the US mail to:

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or electronically, via CompuServe to user ID 70645,247. Via telephone, your editor can be reached at 203-879-1348 on evenings and weekends, and he can switch a modem on line to receive text at 300, 1200, or 2400 bauds.

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